

SEQUENCE LISTING

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<120> METHOD FOR PRODUCING HAEMIN PROTEINS USING PLANT CELLS,
RESULTING PROTEINS AND PRODUCTS CONTAINING SAME

<130> 8076.147USWO

<140> 08/983,564
<141> 1998-06-09

<150> PCT/FR96/01123
<151> 1996-07-17

<150> 95/08615
<151> 1995-07-17

<160> 33

<170> PatentIn Ver. 2.1

<210> 1
<211> 32
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
pBIOC21

<400> 1
agctgattaa ttaaggcgcg ccacgcgtta ac

32

<210> 2
<211> 32
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
pBIOC21

<400> 2
aattgttaac gcgtggcgcg ccttaattaa tc

32

<210> 3
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 3
tacaagctta acaatggtgc tgtctccggc cgac

34

<210> 4
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 4
cggttccacc cggagcttgt g

21

<210> 5
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 5
cacaagctcc gggtggaccc g

21

<210> 6
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 6
tcaacggtat ttggaggtca gcac

24

<210> 7
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 7
gtcattaatt aacaatggtg cacctgactc ctgaggagaa gtcggccgtt ac

52

<210> 8
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 8
aatgagctcg ttaacqcggtt tagtgatact tgtggccag ggc

43

<210> 9
<211> 162
<212> DNA
<213> Nicotiana plumbaginifolia

<400> 9
atggcttctc ggaggcttct cgcctctctc ctccgtcaat cggctcaacg tggcggcggt 60
ctaatttccc gatcggttagg aaactccatc cctaaatccg cttcacgcgc ctcttcacgc 120
gcatcccta agggattcct cttaaaccgc gccgtacagt ac 162

<210> 10
<211> 34
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Nicotiana
plumbaginifolia

<400> 10

cgcaagctta aacaatggctt ctcggaggct tctc

34

<210> 11

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
Nicotiana plumbaginifolia and Homo sapiens

<400> 11

tagaattcgg ccggagacag cacgtactgt acggcgcggt ttaag

45

<210> 12

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Nicotiana
plumbaginifolia

<400> 12

gtcattaatt aacaatggct tctcggaggc ttctcgcctc tc

42

<210> 13

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
Nicotiana plumbaginifolia and Homo sapiens

<400> 13

aatgagctcg gccgacttct cctcaggagt caggtgcacg tactgtacgg cgcggttaa 60
g 61

<210> 14

<211> 171

<212> DNA

<213> *Pisum sativum*

<400> 14

atggcttcta tgatatcctc ttcagctgtg actacagtca gccgtgcttc tacggtgcaa 60
tcggccgcgg tggctccatt cggcggcctc aaatccatga ctggattccc agttaagaag 120
gtcaacactg acattacttc cattacaagc aatggtgaa gagtaaagtgc 171

<210> 15

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: *Pisum sativum*

<400> 15

cgcaagctta acaatggctt ctatgatatac ctcttcagc

39

<210> 16

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
Pisum sativum and *Homo sapiens*

<400> 16

tagaattcgg ccggagacag cacgcacttt actcttccac cattgc

46

<210> 17

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: *Pisum sativum*

<400> 17

gtcattaatt aacaatggct tctatgatatac cctcttcagc tgtg

44

<210> 18

<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic:
Pisum sativum and Homo sapiens

<400> 18
aatgagctcg gccgacttct cctcaggagt caggtgcacg cactttactc ttccacc 57

<210> 19
<211> 69
<212> DNA
<213> Ipomoea batatas

<400> 19
atgaaaggct tcacactcgc tctcttctta gctcttccc tctatctcct gcccaatcca 60
gcccattcc 69

<210> 20
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ipomoea
batatas

<400> 20
cgcaagctta acaatgaaag cttcacact cgc 33

<210> 21
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic:
Ipomoea batatas and Homo sapiens

<400> 21
tagaattcgg ccggagacag cacggaatgg gctggattgg gcagg 45

<210> 22
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ipomoea
batatas

<400> 22
gtcattaatt aacaatgaaa gccttcacac tcgc 34

<210> 23
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic:
Ipomoea batatas and Homo sapiens

<400> 23
aatgagctcg gccgacttct cctcaggagt caggtgcacg gaatgggctg gattggcag 60
g 61

<210> 24
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 24
aaagatgagc ta 12

<210> 25
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Homo sapiens

<400> 25

gcgaattctc atagctcatc tttacggat ttggaggatca gcac

44

<210> 26

<211> 55

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Homo sapiens

<400> 26

aatgagctcg ttaacgcgtt tatacgctat ctttgtata cttgtgggcc agggc 55

<210> 27

<211> 111

<212> DNA

<213> Ipomoea batatas

<400> 27

atgaaaggct tcacactcgc tctcttctta gctcttccc tctatctcct gcccaatcca 60
gcccattcca ggttcaatcc catccgcctc cccaccacac acgaacccgc c 111

<210> 28

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
Ipomea batatas and Homo sapiens

<400> 28

tagaattcgg ccggagacag cacggcggt tcgtgtgtgg ttg

43

<210> 29

<211> 59

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic:
Ipomea batatas and Homo sapiens

<400> 29

aat gagactcg gccgacttct cctcaggagt caggtgcacg gcgggttcgt gtgtggttg 59

<210> 30

<211> 423

<212> DNA

<213> Homo sapiens

<400> 30

gtgctgtctc ctgcccacaa gaccaacgtc aaggccgcct gggcaaggt tggcgcgcac 60
gctggcgagt atggtgcgga ggccctggag aggtatgttcc tgtccttccc caccaccaag 120
acctaacttcc cgcaacttcga cctgagccac ggctctgccc aggttaaggg ccacggcaag 180
aagggtggccg acgcgctgac caacgcgtg ggcacgtgg acgacatgcc caacgcgtg 240
tccgcctga ggcacctgca cgccacaag cttcgggtgg acccggtcaa cttcaagctc 300
ctaagccact gcctgctggt gaccctggcc gcccacctcc ccgcccagtt caccctgcg 360
gtgcacgcct ccctggacaa gttcctggct tctgtgagca ccgtgctgac ctccaaatac 420
cgt 423

<210> 31

<211> 141

<212> PRT

<213> Homo sapiens

<400> 31

Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly Lys
1 5 10 15

Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met
20 25 30

Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala Asp
50 55 60

Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala Leu
65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala His
100 105 110

Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
115 120 125

Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 32

<211> 438

<212> DNA

<213> Homo sapiens

<400> 32

gtgcacctga ctcctgagga gaagtctgcc gttactgccc tgtgggcaa ggtgaacgtg 60
gatgaagttg gtggtgaggc cctggcagg ctgctggttg tctacccttg gacccagagg 120
ttctttgagt cctttggga tctgtccact cctgatgctg ttatggcaa ccctaagggtg 180
aaggctcatg gcaagaaaagt gctcggtgcc ttttagtgcatg gcctggctca cctggacaac 240
ctcaagggca cctttgccac actgagtgag ctgcactgtg acaagctgca cgtggatcct 300
gagaacttca ggctcctggg caacgtgctg gtctgtgtgc tggcccatca ctttggcaaa 360
gaattcaccc caccagtgca ggctgcctat cagaaagtgg tggctgggtgt ggctaattgcc 420
ctagccccaca agtatac 438

<210> 33

<211> 146

<212> PRT

<213> Homo sapiens

<400> 33

Val His Leu Thr Pro Glu Glu Lys Ser Ala Val Thr Ala Leu Trp Gly
1 5 10 15

Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
20 25 30

Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu
35 40 45

Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly
50 55 60

Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn
65 70 75 80

Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys Leu
85 90 95

His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Cys
100 105 110

Vä1 Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln Ala
115 120 125

Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys
130 135 140

Tyr His
145